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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

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REPLY TO: 3450 Administration August 8, 1980

SUBJECT: Dwarf Mistletoe Control - Heart Bar Campground

TO: Forest Supervisor, San Bernardino N.F.

From June 30 to July 3, 1980, Bruce Roettgering and John Pronos, FIDM entomologist and pathologist respectively, surveyed Heart Bar Campground on the San Gorgonio Ranger District. A FIDM biological evaluation dated Dec. 17, 1979, (copy enclosed) recommended that this survey was necessary to delineate areas for dwarf mistletoe control. Survey results have already been given to the District. This memo includes information useful to complete the required control project proposal, economic analysis, and post-suppression evaluation. Other disease problems were identified during the survey, but they will be addressed in a separate report.

Dwarf mistletoe on pines in the campground occurs within discrete areas and at various levels of intensity. When dealing with dwarf mistletoe problems and treatments, regardless of infestation level, the only two alternatives are: 1) to conduct an aggressive and thorough control project, or 2) to defer treatment.

If nothing is done to control the mistletoe, severely infected trees will die,while moderate and light infections will become worse. The mistletoe will also spread to uninfected pines, causing their gradual deterioration. Studies in California campgrounds show that, over a 5-year period, the percentage of trees with Hawksworth infection ratings of 5 or 6 that will die can approach 20%. Another generalization is that trees with scores of 5 or 6 will probably die within 10-15 years. Environmental stresses such as drought would accelerate this mortality.

Control programs in recreation areas have been very successful in other Regions and have demonstrated the following accomplishments:

1. Reduced mortality.
2. Reduced levels of infection.
3. Increased tree vigor.
4. Increased longevity of trees.

Control Treatments and Procedures

Dwarf mistletoe treatments may include:

1. Removing infected overstory to protect regeneration.
2. Pruning witches brooms.
3. Pruning all infected branches.
4. Removing trees with ratings of 4 or more.
5. Thinning to stimulate growth.
6. Creating buffer strips.
7. Favoring resistant species (includes planting).
8. Destroying stands and regenerating.

When applying certain of the above treatments, the following guidelines may help in deciding how to treat individual trees. High-value trees and special situations may require deviation from these generalizations. These deviations should be kept to a minimum in order to maintain treatment efficacy.

1a. Trees with dwarf mistletoe ratings (DMR) of 3 or less -- prune out branches to remove infection.

b. Trees with DMR of 4 - and no mistletoe in upper 1/3 of crown - prune or remove tree depending on condition of crown, distribution of mistletoe and importance of tree.

c. Trees with DMR of 5 or 6 - remove tree.

2. Remove witches brooms from large overstory trees. It may or may not be possible or acceptable to remove all additional branch infections.

3. Avoid removing more than 1/2 of the live crown.

4. A tree must have at least 30% live crown ratio after removing mistletoe.

5. Bole infections - if diameter at the point of infection is less than 6 inches, remove tree.

6. Branches having mistletoe shoots within 6 inches of the bole are not prunable because the parasite is probably already in the bole.

7. Some infections may be left in desirable isolated trees where there are no susceptible trees within range of remaining mistletoe shoots/seeds.

8. In very dense aggregations, suppressed trees could be removed even though they are not infected. Make decisions based on live crown ratio, crown class, spacing and expected appearance and response of residual trees.

9. Construction of new roads, structures, or campsites could be situated to create effective buffer strips. Coordinate dwarf mistletoe control operations with proposed campground changes or construction.

10. Plan to re-enter and treat the campground in 3-5 years to remove previously undetected latent infections.

This memo provides basic information to develop a mistletoe control project. As questions or the need for additional input arise, please contact John Pronos, (415) 556-6864 or other FIDM Staff members.

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Enclosure